REMARKS

In the non-final Office Action, the Examiner rejected claims 4, 5, 17, and 18 under 35

U.S.C. § 112, first paragraph; rejected claims 1-3, 6-11, 13-16, 19-24, 26-32, and 34-36 under 35

U.S.C. § 103(a) as unpatentable over Garg et al. (U.S. Patent No. 6,543,346) in view of Robins et

al. (U.S. Patent No. 5,049,873); rejected claims 4, 5, 17, and 18 under 35 U.S.C. § 103(a) as

unpatentable over Garg et al. in view of Robins et al. and Feldmann (U.S. Patent Application

Publication No. US 2002/0021675 A1); and rejected claims 12, 25, and 33 under 35 U.S.C. §

103(a) as unpatentable over Garg et al. in view of Robins et al. and Lane (U.S. Patent No.

5,437,009).

By this Amendment, Applicant amends claims 1, 7, 10-14, 20, 21, and 23-26 to improve

form. Applicant respectfully traverses the Examiner's rejections under 35 U.S.C. §§ 112 and

103. Claims 1-36 remain pending.

In paragraph 2 of the Office Action, the Examiner rejected claims 4, 5, 17, and 18 under

35 U.S.C. § 112, first paragraph, as allegedly containing subject matter that is not described in

the specification in such a way as to enable one skilled in the art to make and/or use the

invention. In particular, the Examiner alleged that it is unclear from Applicant's specification at

page 9, lines 6-10, how forward tables are created from the collected information (Office Action,

page 2). Applicant traverses the rejection.

Claims 4 and 17 recite creating forwarding tables from the collected information. Proper

support for this feature is provided, for example, at page 6, lines 14-16, and page 8, lines 14-20.

It would be well within the realm of skill of one skilled in the art to create forwarding tables from

the diary information collected from the nodes. For at least these reasons, Applicant submits that proper support is provided for the feature recited in claims 4 and 17.

The Examiner also alleged that it is unclear how forwarding information is compared, as recited in claims 5 and 18 (Office Action, page 2). Applicant also traverses this rejection. It is clearly described in Applicant's specification at page 8, lines 14-20, that system 400 constructs its own forwarding tables from the diary 310 information that it collects from the nodes. System 400 compares its own forwarding tables to the forwarding tables that it collects from the nodes (Applicant's specification at page 9, lines 6-10). As described in Applicant's specification at page 6, lines 14-16, the forwarding tables store information on node-interconnection and/or paths through network 100. The comparison of the forwarding tables reveals when nodes have incorrect forwarding tables and permits the convergence time of the routing protocol to be measured, where the routing protocol convergence time is the time it takes the nodes to react to an event and update their forwarding tables (Applicant's specification at page 9, lines 7-10). Thus, the features recited in claims 5 and 18 are clearly supported by the specification.

For at least the foregoing reasons, Applicant submits that the features recited in claims 4, 5, 17, and 18 are properly supported by the specification and satisfy the requirements of 35 U.S.C. § 112, first paragraph. Accordingly, it is respectfully requested that the rejection of claims 4, 5, 17, and 18 under 35 U.S.C. § 112 be reconsidered and withdrawn.

At pages 2-5 of the Office Action, the Examiner rejected claims 1-3, 6-11, 13-16, 19-24, 26-32, and 34-36 under 35 U.S.C. § 103(a) as allegedly unpatentable over Garg et al. in view of Robins et al. Applicant respectfully traverses the rejection.

Garg et al. discloses a technique for reducing the amount of storage space required for network information by receiving current network information and comparing the current network information with previously received network information (col. 1, line 64 - col. 2, line 1). The current network information is saved if the current network information exceeds the previously received network information by a threshold (col. 2, lines 1-4).

Robins et al. discloses an apparatus for gathering and displaying information concerning status of a communications network without overloading the communication channels in the network (col. 1, lines 57-60).

By contrast, the present invention recited in amended claim 1, for example, includes a combination of features of a method for visualizing a network that includes a plurality of nodes. The method includes collecting information from at least one of the nodes, where the information describes network operation over a period of time; reconstructing the network operation for the time period from the collected information; and replaying, for an operator, the network operation as the network operation occurred during the time period using the reconstructed network operation.

Neither Garg et al. nor Robins et al., whether taken alone or in any reasonable combination, discloses or suggests this claimed combination. For example, neither Garg et al. nor Robins et al. discloses replaying, for an operator, network operation as the network operation occurred during a time period using reconstructed network operation.

When rejecting a similar feature in claim 11, the Examiner alleged that Garg et al. discloses updating a configuration log each time a configuration changes, where the configuration table can be reconstructed at a previous point in time (Office Action, page 4). The

Examiner also alleged that "the example presented discloses sorting the information based on

time using a reasonable but broad interpretation of the claimed subject matter" and cited column

12, lines 5-22, of Garg et al. for support. Applicant disagrees.

At column 12, lines 5-22, Garg et al. discloses:

> By updating configuration log 158 each time the network configuration changes, the
> combination of configuration log 158 and base configuration table 150 can reconstruct
> the configuration of the network at previous points in time. Base configuration table 150
> provides the "current" configuration, and the appropriate changes can be made to identify
> a previous network configuration by searching for appropriate entries in configuration
> log 158.

> By way of example, assume that the "current" time is 8:00 a.m. on Jul. 1, 1998. If a user
> desires to know the configuration of the network on Jan. 1, 1998 at 8:00 a.m., then
> configuration log 158 need simply be searched for any changes which occurred after Jan.
> 1, 1998 at 8:00 a.m. By working "backwards" from base configuration table 150, any
> such identified changes can be "reversed" and a table generated of the network
> configuration as it existed on Jan. 1, 1998 at 8:00 a.m.

Garg et al. appears to disclose in this section that a prior configuration of the network can

be reconstructed using a combination of configuration log 158 and base configuration

table 150. Garg et al. discloses that by working backwards from base configuration table

150 (i.e., the current network configuration) and applying changes that have been

recorded in configuration log 158, "a table [can be] generated of the network

configuration as it existed [at some prior time]" (col. 12, lines 14-22).

This is very different from what is recited in claim 1. Claim 1 recites "network

operation," not "network configuration," as described by Garg et al. Network operation

means just what it says: the operation of the network, which implies something that

occurs over time. By stark contrast, network configuration is a snapshot of how the

network looked at certain point in time. Garg et al. does not disclose replaying network operation.

Applicant has amended claim 1 to clarify that the network operation is the network operation as it occurred during the time period, even though Applicant submits that this was implied in the original claim. Garg et al. does not disclose network operation and, therefore, does not disclose "replaying, for an operator, network operation as the network operation occurred during the time period," as recited in amended claim 1. In fact, Garg et al. discloses reconstructing a table of a prior network configuration (col. 12, lines 14-22), not replaying network operation.

The disclosure of Robins et al. provides nothing to cure these deficiencies in the disclosure of Garg et al. The Examiner relied on Robins et al. for allegedly disclosing "a motivation of having a switch operator interface 13 with a monitoring node 11" and cited column 5, lines 20-55, of Robins et al. for support (Office Action, page 3). While Robins et al. appears to disclose an operator interface 13 that is used for access to configuration programs running in the switching nodes and which communicates with the switching node 1 (col. 4, lines 29-33), nowhere in the section identified by the Examiner, or elsewhere, does Robins et al. disclose or suggest replaying, for an operator, network operation as the network operation occurred during the time period, as recited in amended claim 1.

For at least the foregoing reasons, Applicant submits that claim 1 is patentable over Garg et al. and Robins et al., whether taken alone or in any reasonable combination. Claims 2, 3, and 6-11 depend from claim 1 and are, therefore, patentable over Garg et al.

and Robins et al. for at least the reasons given with regard to claim 1. Claims 2, 3, and 6-11 are also patentable for reasons of their own.

When rejecting claims 9 and 10, the Examiner alleged that Robins et al. discloses the recited feature (Office Action, page 4). Without acquiescing in the rejection, Applicant notes that the Examiner did not provide any evidence as to why one of ordinary skill in art would have been motivated to combine the alleged feature of Robins et al. with the system of Garg et al. Therefore, the Examiner did not properly establish a prima facie case of obviousness with regard to claims 9 and 10.

For at least this additional reason, Applicant submits that claims 9 and 10 are patentable over Garg et al. and Robins et al.

Furthermore, claim 10 recites displaying the network operation to the operator and permitting the operator to manipulate the displaying of the network operation. The Examiner alleged that Robins et al. discloses these features and cited Fig. 2 of Robins et al. for support (Office Action, page 4). Applicant disagrees.

In Fig. 2, Robins et al. shows several display windows. Display window 20 graphically represents the topology of the network to the operator (col. 4, lines 44-46). Display window 23 illustrates the configuration of a subject node (col. 4, lines 59-60). Display window 27 presents a list of alarm conditions occurring throughout the network (col. 5, lines 5-6). Display window 28 provides an interactive user interface window, such as may serve the operator interface 13 to switch configuration tools, switch diagnostics, and the like (col. 5, lines 7-10). Display window 29 provides a menu service for the operator based on icons (col. 5, lines 13-14). Display window 30 displays monitor system messages, such as the status of various monitor applications (col. 5,

lines 15-17). None of these windows displays <u>network operation</u> or permits the operator to manipulate the displaying of network operation.

For at least these additional reasons, Applicant submits that claim 10 is patentable over <u>Garg et al.</u> and <u>Robins et al.</u>

Claim 11 recites permitting the operator to manipulate the replaying of the network operation. Neither <u>Garg et al.</u> nor <u>Robins et al.</u> discloses or suggests this feature. Because <u>Garg et al.</u> and <u>Robins et al.</u> do not disclose replaying network operation, neither of these references can be relied upon for disclosing permitting the operator to manipulate this replaying of the network operation.

The Examiner alleged that <u>Garg et al.</u> discloses updating a configuration log each time a configuration changes, where the configuration table can be reconstructed at a previous point in time (Office Action, page 4). The Examiner also alleged that "the example presented discloses sorting the information based on time using a reasonable but broad interpretation of the claimed subject matter" and cited column 12, lines 5-22, of <u>Garg et al.</u> for support. Applicant disagrees.

This section of <u>Garg et al.</u> was reproduced above. In this section <u>Garg et al.</u> appears to disclose reconstructing a network configuration as it existed at some prior point in time (col. 12, lines 18-22). But nowhere in this section, or elsewhere, does <u>Garg et al.</u> disclose permitting the operator to manipulate the replaying of <u>network operation</u>. The disclosure of <u>Robins et al.</u> provides nothing to cure these deficiencies in the disclosure of <u>Garg et al.</u>

For at least these additional reasons, Applicant submits that claim 11 is patentable over <u>Garg et al.</u> and <u>Robins et al.</u>

Independent claims 13, 14, 26, and 34 recite features similar to the features described above with regard to claim 1. Claims 13, 14, 26, and 34 are, therefore, patentable over Garg et al. and Robins et al., whether taken alone or in any reasonable combination, for reasons similar to those given with regard to claim 1. Claims 15, 16, and 19-24 depend from claim 14 and claims 35 and 36 depend from claim 34 and are, therefore, patentable over Garg et al. and Robins et al. for at least the reasons given with regard to claims 14 and 34. Claims 15, 16, and 19-24 also recite features similar to the features described above with regard to claims 2, 3, and 6-11. Claims 15, 16, and 19-24 are, therefore, patentable over Garg et al. and Robins et al. for reasons similar to those given with regard to claims 2, 3, and 6-11.

Independent claim 27 recites a combination of features of a computer-readable memory device of a node in a network containing a network operations data structure. The memory includes a first area that stores information regarding node status changes; a second area that stores information regarding messages received and transmitted by the node; and a third area that stores information regarding link status changes in the network.

When rejecting claim 27, the Examiner simply alleged "using a reasonable but broad interpretation of 'area' Garg discloses all three areas as shown in figure 3" (Office Action, page 4). The Examiner appears to be alleging that Garg et al. anticipates the claim, instead of relying on a combination of Garg et al. and Robins et al. in an obviousness rejection. Clarification of the grounds of rejection is respectfully requested.

Nevertheless, neither Garg et al. nor Robins et al. discloses the combination of features recited in claim 27. In Fig. 3, Garg et al. illustrates the data reduction module. At column 5, lines 37-46, Garg et al. describes Fig. 3 as:

FIG. 3 illustrates a data reduction module 32 according to one embodiment of the present invention. Reduction module 32 includes performance recordation control 42 to generate and update as necessary the various tables and logs maintained for storage of information regarding network performance in accordance with the present invention. Reduction module 32 also includes configuration recordation control 44 to generate and update as necessary the various tables and logs maintained for storage of information regarding network configuration in accordance with the present invention.

Nowhere in this section does Garg et al. disclose or suggest the first, second, and third areas recited in claim 27. In Figs. 5-8, 10, 11, 15, and 16, Garg et al. illustrates various tables provided in the system. It is important to note that all of these tables are stored by network monitor 22 of Garg et al. and that none of these tables record any information regarding the operation of network monitor 22 (see, generally, col. 5, lines 37-46; col. 6, lines 17-24).

By contrast, claim 27 is directed to a computer-readable memory device of a node in a network that includes, for example, a first area that stores information regarding node status changes and a second area that stores information regarding messages received and transmitted by the node. Garg et al. does not disclose such first and second areas. In other words, if network monitor 12 is alleged to be the equivalent of the node recited in claim 27, none of the tables in Garg et al. includes information regarding status changes of the network monitor or information regarding messages received and transmitted by the network monitor. Garg et al. also does not disclose a third area that stores information regarding link status changes. The disclosure of Robins et al. does not cure these deficiencies in the disclosure of Garg et al.

For at least the foregoing reasons, Applicant submits that claim 27 is patentable over Garg et al. and Robins et al., whether taken alone or in any reasonable combination. Claims 28-31 depend from claim 27 and are, therefore, patentable over Garg et al. and Robins et al. for at

least the reasons given with regard to claim 27. Claims 28-31 are further patentable for reasons

of their own.

For example, claim 28 recites that the node status change information includes

information regarding state changes of the node and time stamps indicating times corresponding

to the state changes. Neither Garg et al. nor Robins et al. discloses or suggests these features.

The Examiner alleged that Garg et al. discloses these features and cited Figs. 5-10 of

Garg et al. for support (Office Action, page 5). Applicant disagrees. As explained above, these

figures of Garg et al. illustrate tables maintained by network monitor 12. If network monitor 12

is alleged to be the equivalent of the node recited in claims 27 and 28, none of the tables in Garg

et al. includes information regarding state changes of the network monitor. The disclosure of

Robins et al. provides nothing to cure these deficiencies in the disclosure of Garg et al.

Similar arguments can be made for claims 29 and 30.

For at least these additional reasons, Applicant submits that claims 28-30 are patentable

over Garg et al. and Robins et al.

Claim 31 recites a fourth area that stores a forwarding table for the node. Neither Garg et

al. nor Robins et al. discloses or suggests this feature.

The Examiner alleged that Garg et al. discloses this feature and cited Figs. 5-10 of Garg et

al. for support (Office Action, page 5). Applicant disagrees. As explained above, these figures

of Garg et al. illustrate tables maintained by network monitor 12. If network monitor 12 is

alleged to be the equivalent of the node recited in claims 27 and 31, none of the tables in Garg et

al. includes a forwarding table for the network monitor. The disclosure of Robins et al. provides

nothing to cure these deficiencies in the disclosure of Garg et al.

For at least these additional reasons, Applicant submits that claim 31 is patentable over Garg et al. and Robins et al.

Claim 32 recites a combination of features of an interactive graphical user interface for visualizing a network having a plurality of nodes. The graphical user interface includes a network topology diagram configured to display at least some of the nodes, links connecting the nodes, and messages transmitted through the network, and replay controls that permit an operator to control a replay sequence of the network as the network operates over a period of time.

Neither Garg et al. nor Robins et al. discloses or suggests this claimed combination. The Examiner rejected these features only generally when rejecting claim 1. The Examiner did not specifically address the features. Therefore, the Examiner did not establish a prima facie case of obviousness with regard to claim 33.

Nevertheless, neither Garg et al. nor Robins et al. discloses a network topology diagram that is configured to display, for example, messages transmitted through the network. Garg et al. does not disclose a network topology diagram. Robins et al. appears to disclose a network topology diagram in Fig. 2, but does not disclose displaying messages transmitted through the network, as recited in claim 32.

Also as described above with regard to claims 1 and 11, neither Garg et al. nor Robins et al. discloses or suggests replay controls that permit an operator to control a replay sequence of the network as the network operates over a period of time, as recited in claim 32.

For at least these reasons, Applicant submits that claim 32 is patentable over Garg et al. and Robins et al., whether taken alone or in any reasonable combination.

For at least the foregoing reasons, Applicant submits the claims 1-3, 6-11, 13-16, 19-24, 26-32, and 34-36 are patentable over <u>Garg et al.</u> and <u>Robins et al.</u>, whether taken alone or in any reasonable combination. Accordingly, it is respectfully requested that the rejection of claims 1-3, 6-11, 13-16, 19-24, 26-32, and 34-36 under 35 U.S.C. § 103 be reconsidered and withdrawn.

At page 5 of the Office Action, the Examiner rejected claims 4, 5, 17, and 18 under 35 U.S.C. § 103(a) as allegedly unpatentable over <u>Garg et al.</u> in view of <u>Robins et al.</u> and <u>Feldmann</u>. Applicant respectfully traverses the rejection.

Claims 4, 5, 17, and 18 variously depend from claims 1 and 14. While not acquiescing in the Examiner's rejection, Applicant submits that the disclosure of <u>Feldmann</u> provides nothing to cure the deficiencies in the disclosures of <u>Garg et al.</u> and <u>Robins et al.</u>, as described above with regard to the features of claims 1 and 14. Therefore, claims 4, 5, 17, and 18 are patentable over <u>Garg et al.</u>, <u>Robins et al.</u>, and <u>Feldmann</u>, whether taken alone or in any reasonable combination, for at least the reasons given with regard to claims 1 and 14. Accordingly, it is respectfully requested that the rejection of claims 4, 5, 17, and 18 under 35 U.S.C. § 103 be reconsidered and withdrawn.

At page 6 of the Office Action, the Examiner rejected claims 12, 25, and 33 under 35 U.S.C. § 103(a) as allegedly unpatentable over <u>Garg et al.</u> in view of <u>Robins et al.</u> and <u>Lane</u>. Applicant respectfully traverses the rejection.

Claims 12, 25, and 33 depend from claims 1, 14, and 32, respectively. While not acquiescing in the Examiner's rejection, Applicant submits that the disclosure of <u>Lane</u> provides nothing to cure the deficiencies in the disclosures of <u>Garg et al.</u> and <u>Robins et al.</u>, as described above with regard to the features of claims 1, 14, and 32. Therefore, claims 12, 25, and 33 are

patentable over <u>Garg et al.</u>, <u>Robins et al.</u>, and <u>Lane</u>, whether taken alone or in any reasonable combination, for at least the reasons given with regard to claims 1, 14, and 32. Accordingly, it is respectfully requested that the rejection of claims 12, 25, and 33 under 35 U.S.C. § 103 be reconsidered and withdrawn.

In view of the foregoing amendments and remarks, Applicant respectfully requests the reconsideration of this application and the timely allowance of the pending claims.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 07-2339 and please credit any excess fees to such deposit account.

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